

1     What is claimed is:

2  
3       1. A detergent storing assembly of a washing machine, the detergent storing  
4       assembly comprising:

5              a detergent box provided to a cabinet of the washing machine to hold detergent and to  
6       supply the detergent to a tub for washing;

7              a lid part fixed to a topside of the detergent box to open/close; and  
8              an incorrect-assembling preventing means for leading the lid part to a correct position  
9       for a reciprocal assembling of the lid part and the detergent box.

10  
11       2. The detergent storing assembly as claimed in claim 1, wherein the incorrect-  
12       assembling preventing means comprises;

13              at least one guide protrusion protruding from a bottom of the lid part to interrupt the  
14       reciprocal assembling in case that the lid part is incorrectly disposed over the detergent box,  
15       and

16              at least one guide groove formed at a portion of the detergent box corresponding to  
17       the guide protrusion to have the at least one guide protrusion inserted therein.

18  
19       3. The detergent storing assembly as claimed in claim 1, wherein the incorrect-  
20       assembling preventing means comprises;

21              at least one guide protrusion protruding from the topside of the detergent box to  
22       interrupt the reciprocal assembling in case that the lid part is incorrectly disposed over the  
23       detergent box, and

24              at least one guide groove formed at a bottom of the lid part corresponding to the

25 guide protrusion to have the at least one guide protrusion inserted therein.

26

27       4.     The detergent storing assembly as claimed in claim 1, wherein the lid part  
28     comprises;

29              a lid frame fixed to the detergent box and having an opening at a center to put the  
30     detergent in the detergent box, and

31              a revolvable lid installed at one side of the lid frame to open/close the topside of the  
32     detergent box.

33

34       5.     The detergent storing assembly as claimed in claim 4, wherein the lid frame  
35     is fixed to the detergent box by at least one screw coupled from a topside of the lid frame.

36

37       6.     The detergent storing assembly as claimed in claim 5, wherein the lid frame  
38     comprises coupling protrusions protruding from a bottom toward the detergent box to have  
39     cavities in an axial direction, respectively and wherein the detergent box comprises insertion  
40     protrusions protruding from a rim of the topside of the detergent box to be inserted in the  
41     cavities of the coupling protrusions and having screw threads inside to be coupled to the  
42     screws, respectively.

43

44       7.     The detergent storing assembly as claimed in claim 4, wherein the incorrect-  
45     assembling preventing means comprises;

46              at least one guide protrusion protruding from a bottom of the lid frame to interrupt the  
47     reciprocal assembling in case that the lid part is incorrectly disposed over the detergent box,  
48     and

49           at least one guide groove formed at a rim of the detergent box corresponding to the  
50       guide protrusion to have the at least one guide protrusion inserted therein.

51

52       8.       The detergent storing assembly as claimed in claim 4, wherein the incorrect-  
53       assembling preventing means comprises;

54           at least one guide protrusion protruding from a rim of the detergent box to interrupt  
55       the reciprocal assembling in case that the lid part is incorrectly disposed over the detergent  
56       box, and

57           at least one guide groove formed at a bottom of the lid part corresponding to the  
58       guide protrusion to have the at least one guide protrusion inserted therein.

59

60       9.       The detergent storing assembly as claimed in claim 4, wherein the lid frame  
61       comprises a rectangular frame having a rectangular opening at a central part.

62

63       10.      The detergent storing assembly as claimed in claim 6, wherein the lid frame  
64       comprises a rectangular frame having a rectangular opening at a central part.

65

66       11.      The detergent storing assembly as claimed in claim 10, wherein the incorrect-  
67       assembling preventing means comprises;

68           guide grooves recessed into inner walls of the cavities of the coupling protrusions in  
69       different directions, respectively to interrupt the reciprocal assembling in case that the lid part  
70       is incorrectly disposed over the detergent box, and

71           guide protrusions protruding from outsides of the insertion protrusions in directions  
72       corresponding to the guide grooves, respectively.

73

74       12. A washing machine comprising:

75            a tub having an open front side to hold water and detergent;

76            a drum rotatably installed in the tub to hold laundry;

77            a motor rotating the drum;

78            a cabinet having the tub and the motor inside; and

79            a detergent storing assembly at the cabinet to provide the detergent to the

80            tub, the detergent storing assembly comprising:

81                a detergent box having an open topside to store the detergent and to

82                provide the detergent to the tub for washing;

83                a lid part fixed to the topside of the detergent box to open/close; and

84                an incorrect-assembling preventing means for leading the lid part to

85                a correct position for a reciprocal assembling of the lid part and the detergent

86                box.

87

88        13. The washing machine as claimed in claim 12, wherein the incorrect-

89            assembling preventing means comprises;

90                at least one guide protrusion protruding from a bottom of the lid part to interrupt the

91                reciprocal assembling in case that the lid part is incorrectly disposed over the detergent box,

92                and

93                at least one guide groove formed at a portion of the detergent box corresponding to

94                the guide protrusion to have the at least one guide protrusion inserted therein.

95

96        14. The washing machine as claimed in claim 12, wherein the incorrect-

97 assembling preventing means comprises;

98 at least one guide protrusion protruding from the topside of the detergent box to  
99 interrupt the reciprocal assembling in case that the lid part is incorrectly disposed over the  
100 detergent box, and

101 at least one guide groove formed at a bottom of the lid part corresponding to the  
102 guide protrusion to have the at least one guide protrusion inserted therein.

103

104 15. The washing machine as claimed in claim 12, wherein the lid part comprises;  
105 a lid frame fixed to the detergent box and having an opening at a center to put the  
106 detergent in the detergent box, and

107 a revolvable lid installed at one side of the lid frame to open/close the topside of the  
108 detergent box.

109

110 16. The washing machine as claimed in claim 15, wherein the lid frame is fixed  
111 to the detergent box by at least one screw coupled from a topside of the lid frame.

112

113 17. The washing machine as claimed in claim 16, wherein the lid frame  
114 comprises coupling protrusions protruding from a bottom toward the detergent box to have  
115 cavities in an axial direction, respectively and wherein the detergent box comprises insertion  
116 protrusions protruding from a rim of the topside of the detergent box to be inserted in the  
117 cavities of the coupling protrusions and having screw threads inside to be coupled to the  
118 screws, respectively.

119

120 18. The washing machine as claimed in claim 17, wherein the lid frame

121 comprises a rectangular frame having a rectangular opening at a central part.

122

123       19. The washing machine as claimed in claim 18, wherein the coupling  
124 protrusions are formed at bottoms of a pair of long or short sides of the lid frame.

125

126       20. The washing machine as claimed in claim 19, wherein the incorrect-  
127 assembling preventing means comprises;

128              guide grooves formed at inner walls of the cavities of the coupling protrusions at a  
129 pair of the long or short sides in different directions, respectively to interrupt the reciprocal  
130 assembling in case that the lid part is incorrectly disposed over the detergent box, and

131              guide protrusions protruding from outsides of the insertion protrusions in directions  
132 corresponding to the guide grooves, respectively.

133